

2002 Water Quality Report

This annual report contains information about the quality of the water supplied by the U.S. Navy Water System during the period of January 1st to December 31st 2002. On the reverse side of this report is a table entitled “2002 U.S. Navy Water Quality Data”, which lists the contaminants that were found in our system.

This report will help you, our customer, understand the relationship between the contaminants found in drinking water, activities that may contaminate the water supply, and their associated health effects.



THE U.S. NAVY WATER SYSTEM

The U.S. Navy Public Works Center Guam and Raytheon Technical Services Guam, Inc. through a subcontract with Earth Tech, Inc operates the U.S. Navy Water System.

The Fena reservoir is the primary source of water for the U.S. Navy Water System and is supplemented by the Almagosa and Bona springs. Water from the reservoir and springs is processed at the Fena Water Treatment Plant before distribution. Our plant was built in the 1950's. Recent upgrades have been made at our plant to meet the latest EPA treatment standards. In addition, a total of eleven (11) groundwater wells -- three (3) at the Naval Hospital area, two (2) at Barrigada, two (2) at South Finegayan, and four (4) at North Finegayan further augment our water system.

WHAT ARE DRINKING WATER CONTAMINANTS AND WHERE DO THEY COME FROM?

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water moves over land or through the ground, it dissolves naturally

occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in untreated water include:

- *Microbial contaminants*, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife;
- *Inorganic contaminants*, such as metals, which can be naturally occurring or result from urban storm runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;
- *Pesticides and herbicides*, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses;
- *Radioactive contaminants*, which can be naturally occurring or be the result of oil and gas production and mining activities;
- *Organic chemical contaminants*, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.

Navy Water Quality Performance

USEPA and Guam EPA set Maximum Contaminant Level (MCL) standards that limit the amount of certain contaminants in drinking water.

National Primary Drinking Water Regulations set limits for contaminants in drinking water and standards for water treatment that primarily safeguard health.

National Secondary Drinking Water Regulations are non-enforceable guidelines for limiting contaminants in drinking water that affect its aesthetic quality (i.e. taste, smell, appearance, staining properties, etc.). Meeting these standards ensure that the tap water we provide to you is both safe and aesthetically pleasing to drink.

A. PRIMARY DRINKING WATER STANDARDS

The U.S. Navy Water System met all primary drinking water Maximum Contaminant Level (MCL) standards in 2002. These include microbiological, organic and inorganic contaminants.

B. TURBIDITY (TREATMENT TECHNIQUE)

Turbidity is a measure of the cloudiness of water. Standards require that no more than 5 percent of monthly samples exceed 0.3 Nephelometric Turbidity Units (NTU) and no sample may exceed 1.0 NTU. In January and July 2002 this standard was not met. Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites which can cause symptoms such as nausea, cramps, diarrhea & associated headaches. The elevated turbidity measurements were attributed to frequent and heavy rains in the month of January and to the inversion of the Fena Reservoir caused by Typhoon Chata'an in July. To prevent future occurrences, efforts have been focused on automating process controls at the treatment plant. Installation of sophisticated turbidity monitoring and flow metering equipment will assist our skilled operators in dealing with high raw water turbidity especially during times of typhoon and heavy rainfall.

C. AESTHETICS (SECONDARY CONTAMINANTS)

Water samples taken from various locations and at different times throughout the year, found infrequent occurrences of high levels of aluminum, iron, chlorides, Total Dissolved Solids (TDS), and color units that were more than recommended levels. These contaminants, while relate to poor aesthetic quality of water, do not indicate a health hazard. Systematic and routine water line flushing has helped to improve the aesthetic quality of our drinking water.

Drinking water, including bottled water, may reasonably be expected to contain small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling EPA's Safe Drinking Water Hotline (800-426-4791).



How Can You Report A Water Quality Complaint?

When you notice that your water is discolored we strongly encourage you to report your complaint to the Work Control Center Trouble Desk at **333-2011**. Once the complaint is received, arrangements are made to have the water tested to ensure it is safe to drink.

HEALTH PRECAUTIONS

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as cancer patients undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly and infants, particularly can be at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminant are available from the Safe Drinking Water Hotline (800) 426-4791.



HOW CAN YOU OBTAIN ADDITIONAL INFORMATION?

For additional information about the U.S. Navy Water System or this report, please feel free to call Raytheon Technical Services Guam (RTSG), Inc. Environmental Compliance Office at **339-8023**, the U.S. Navy Public Works Center Guam, Environmental Services Department at **339-4100**, or the Guam EPA Safe Drinking Water Program at **475-1660/1**.

Navy Water System

Potable Water Wells:

NCS-A, 6, 7, and 9

NCS-2 and 5

NCS-3 and 8

NMRC-1, 2, and 3

Naval Activities
Hospital
Treatment Plant
Fena
Springs and Reservoir

NCTS

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Commander U.S. Naval Forces, Marianas
Navy Housing Welcome Center (N7)
PSC 455, Box 50
FPO AP 96540-0051

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Water Quality Report



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2002 U.S. NAVY WATER QUALITY DATA

DEFINITIONS:

1. Action Level (AL) - The concentration of a contaminant which, when exceeded, triggers treatment or other requirements which a water system must follow.

2. Maximum Contaminant Level (MCL) - The highest level of a contaminant allowed in drinking water; MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

3. Maximum Contaminant Level Goal (MCLG) - The level of a contaminant in drinking water below which there is no known or expected risk to health; MCLGs allow for a margin of safety.

4. Maximum Residual Disinfectant Level (MRDL) - The level of a disinfectant that may not be exceeded at the consumer's tap without an unacceptable possibility of adverse health effects.

5. Maximum Residual Disinfectant Level Goal (MRDLG) - The maximum level of a disinfectant added for water treatment at which no known or anticipated adverse health effect would occur; MRDLGs allow for a margin of safety.

6. Treatment Technique (TT) - A required process intended to reduce the level of a contaminant in drinking water.

7. Reporting Value (RV) - That used for determining compliance with anMCL, and is the highest monthly average of sources tested.

ABBREVIATIONS:	n/a - not applicable						
	nd - not detected						
	ns - no standard						
	NTU - Nephelometric Turbidity Units						
	ARA - Annual Running Average						
			LDCL - lowest detected contaminant level				ppm - parts per million or milligrams per liter
			HDCL - highest detected contaminant level				ppb - parts per billion or micrograms per liter
			IOC - Inorganic Compound				ppt - parts per trillions or nanograms per liter
			SOC - Synthetic Organic Compound				pCi/L - picocuries per liter, a measure of radioactivity
			VOC - Volatile Organic Compound				mrem/yr - millirem per year, a measure of radioactivity

I. PRIMARY STANDARDS, Mandatory, Health-Related Standards, established by GEPA/USEPA

CONTAMINANT (Units)	MCLG	MCL	LDCL (Date)	HDCL (Date)	ARA	Violation	Major Sources of Contaminant	Locations Detected
Regulated (VOCs)								
Dichloromethane (ppb)	0	5	nd (4/22)	0.6 (9/16)	n/a	no	Industrial solvents and paint strippers, used in aerosol and pesticide products	Well NRMC 1
Regulated (SOCs), including Pesticides and Herbicides								
Chlordane (ppb)	0	2	nd (4/22)	0.82 (4/22)	n/a	no	Residue of banned termiticide	Wells NCS-3, NCS-5, NCS-A, NRMC-3
Di(2-ethylhexyl)phthalate (ppb)	0	6	nd (4/22)	0.7 (4/23)	n/a	no	Discharge from rubber and chemical factories	Well NCS-5
Heptachlor epoxide (ppt)	0	200	nd (4/22)	20 (4/22)	n/a	no	Breakdown of heptachlor	Well NRMC-3
Simazine (ppb)	4	4	nd (4/22)	0.08 (4/22)	n/a	no	Herbicide runoff	Wells NCS-3, NRMC-2, NRMC-3
Regulated (IOCs)								
Barium (ppb)	2000	2000	nd (4/22)	3.4 (6/3)	n/a	no	Discharge from oil drilling wastes, metal refineries, and erosion of natural deposits	Fena WTP Clearwell, Well NRMC-3
Chromium (ppb)	100	100	nd (4/23)	8.7 (9/16)	n/a	no	Brick lining for industrial furnaces, used in making metals and alloys, dyes and pigments, leather tanning, wood preserving, rust inhibitors, textiles and toner for copy machines	Wells NRMC-1, NRMC-2, NRMC-3, NCS-3
Fluoride (ppm)	4	4	nd (6/03)	0.73 (10/21)	n/a	no	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories	Fena WTP Clearwell, Wells NRMC-2, NRMC-3, NCS-3, NCS-5, NCS-6, NCS-7, NCS-A
Mercury (ppb)	2	2	nd (4/22)	0.254 (4/22)	n/a	no	Manufacture of paint, paper, vinyl chloride, runoff from fungicide use	Well NRMC-2
Nitrate (ppm)	10	10	0.219 (10/21)	2.199 (10/07)	n/a	no	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits	Fena WTP Clearwell, Wells NCS-5, NCS-6, NCS-A, NRMC-1, NRMC- 2, NRMC-3
Nitrite (ppm)	1	1	nd (10/21)	0.009 (10/21)	n/a	no	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits	Wells NRMC-1, NRMC-2, NCS-5
Total Nitrate and Nitrite (ppm)	10	10	0.219 (10/21)	2.199 (10/07)	n/a	no	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits	Fena WTP Clearwell, Wells NCS-5, NCS-6, NCS-A, NRMC-1, NRMC- 2, NRMC-3
Radionuclides								
Gross Alpha Activity (pCi/L)	0	15	nd (2/18)	4.6 (10/21)	n/a	no	Erosion of natural deposits	Fena WTP Clearwell, Wells NCS-3, NCS-5, NCS-6, NCS-7, NCS-A, NRMC-1, NRMC-2, NRMC-3
Gross Beta Activity (pCi/L)	0	50*	nd (2/18)	7.64 (10/21)	n/a	no	Decay of natural and man-made deposits	Fena WTP Clearwell, Wells NCS-3, NCS-5, NCS-6, NCS-7, NCS-A, NRMC-1, NRMC-2, NRMC-3
Disinfection Byproduct (DBPs), Byproduct Precursors, and Disinfectant Residuals								
HAA5 [Five Haloacetic Acids] (ppb)	0	60	29.6 (10/ 01&15)	41.9 (7/30)	34.3	no	By-product of drinking water chlorination	Distribution system, Fena WTP Clearwell
TTHMs [Total trihalomethanes] (ppb)	0	100	44.1 (7/30)	59.5 (4/28)	51	no	By-product of drinking water chlorination	Distribution system, Fena WTP Clearwell
Chlorine (ppm)	4 (MRDLG)	4 (MRDL)	0 (5/06)	4.3 (12/20)	1.64	no	Disinfectant for drinking water	Distribution system, Fena WTP Clearwell
Control of DBP precursors (TOC)	n/a	TT	1.2 (5/13)	2.7 (8/13)	n/a	no	Precursor for by-product of drinking water chlorination	Distribution system, Fena WTP Clearwell
Special Monitoring for Sodium								
Sodium (ppm)	n/a	n/a	10 (7/01)	190 (4/23)	n/a	no	Salt water intrusion from aquifer/saltwater interface	Fena WTP Clearwell, Wells NRMC-1, NRMC-2, NRMC-3, NCS-3, NCS-5, NCS-6, NCS-7, NCS-A

CONTAMINANT (Units)	MCLG	AL	LDCL (Date)	HDCL (Date)	90th Percentile Level	Violation	Major Sources of Contaminant	Locations Detected
Lead and Copper								
Copper (ppb)	1300	1300	80 (5/13)	2010 (5/15)	1180	no	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives	Distribution system, housing, barracks quarters
Lead (ppb)	0	15	<1.0 (5/13)	72 (5/15)	9	no	Corrosion of household plumbing systems; erosion of natural deposits	Distribution system, housing, barracks quarters
CONTAMINANT (Units)	MCLG	MCL	RV (Date)		Violation	Major Sources of Contaminant	Locations Detected	
Microbiological Contaminants								
Total Coliform [TC] (% positive per month)	0	0.05	0% (entire year)		no	Naturally present in the environment	n/a	
Fecal Coliform [FC]	0	See Note 1	0		no	Human and animal fecal waste	n/a	
CONTAMINANT (Units)	MCLG	MCL	LDCL (Date)	HDCL (Date)	Violation	Major Sources of Contaminant	Locations Detected	
Turbidity as an Indicator of Filtration Performance								
Turbidity (NTU)	n/a	<0.3 See Note 2	94.9% (July)	154 (7/16)	YES	Soil runoff	Fena WTP Clearwell	

II. UNREGULATED CONTAMINANTS (Monitoring Required)**

CONTAMINANT (Units)	MCLG	MCL	LDCL (Date)	HDCL (Date)	ARA	Violation	Major Sources of Contaminant	Locations Detected
Unregulated (VOCs)								
Bromodichloromethane (ppb)	ns	ns	nd (4/22)	12 (6/03)	n/a	n/a	By-product of drinking water chlorination	Fena WTP Clearwell, Well NCS-3
Chloroform (ppb)	ns	ns	nd (4/22)	21 (6/03)	n/a	n/a	By-product of drinking water chlorination	Fena WTP Clearwell, Wells NRMC-1, NRMC-3, NCS-3
Chlorodibromethane (ppb)	ns	ns	nd (4/22)	4.7 (7/01)	n/a	n/a	By-product of drinking water chlorination	Fena WTP Clearwell
Unregulated (SOCs)								
Dieldrin (ppb)	ns	ns	nd (4/23)	0.13 (4/22)	n/a	n/a	Runoff/leaching from insecticide used on sheep, lumber, and to control vectors such as mosquitoes and tsetse flies	Wells NRMC-3, NCS-3, NCS-5, NCS-A
Unregulated (IOCs)								
Sulfate (ppm)	ns	ns	3.52 (4/23)	64.4 (4/23)	n/a	n/a	Naturally occurring in ground water and surface water sources	Fena WTP Clearwell, Wells NRMC-1, NRMC-2, NRMC-3, NCS-3, NCS-5, NCS-6, NCS-7, NCS-A

* The MCL for beta particles is 4 mrem/year dose equivalents to bone marrow. EPA considers the average annual concentration of 50 pCi/L as the level of concern for beta particles.

** Unregulated contaminant monitoring helps EPA determine where certain contaminants occur and whether these contaminants need to be regulated.

Note 1: MCL = a routine and a repeat sample are TC positive, and at least one is also FC or E. coli positive.

Note 2: < 0.3 NTU in 95% of monthly samples measured every 4 hours.

III. SECONDARY STANDARDS,***

CONTAMINANT (Units)	MCLG	MCL	LDCL (Date)	HDCL (Date)	Violation	Major Sources of Contaminant	Locations Detected
Aluminum (ppm)	ns	0.05 to 0.2	nd (4/22)	1.10 (9/16)	yes [†]	Naturally occurring in the environment, used in paints, fireworks, glass, rubber, ceramics	Fena WTP Clearwell, NRMC-1, NRMC-2, NRMC-3
Iron (ppb)	ns	300	nd (4/22)	1800 (9/16)	yes [†]	Naturally occurring in the environment	NRMC-1, NRMC-2, NRMC-3, NCS-5, NCS-A
Zinc (ppm)	ns	5	nd (7/01)	0.09 (9/16)	no	Naturally occurring in the environment, dry cell battery, paint, ceramic, and rubber production, corrosion inhibitor	NRMC-1, NRMC-2, NRMC-3, NCS-3, NCS-5, NCS-6, NCS-7, NCS-A
Manganese (ppb)	ns	50	nd (4/23)	33 (9/16)	no	Naturally occurring in the environment, battery and ceramic production, pesticides, fertilizers	NRMC-1, NRMC-2, NRMC-3, NCS-5, NCS-A
Copper (ppb)	ns	1000	nd (4/23)	11 (7/01)	no	Naturally occurring in the environment, used to treat plant diseases (mildew), or as preservatives for wood, leather, fabrics	NRMC-1, NRMC-2, NRMC-3, NCS-6, NCS-7
Chloride (ppm)	ns	250	15 (10/21)	354 (4/23)	yes [†]	Salt water intrusion from aquifer/saltwater interface	Fena WTP Clearwell, NRMC-1, NRMC-2, NRMC-3, NCS-3, NCS-5, NCS-6, NCS-7, NCS-A
Sulfate (ppm)	ns	250	3.52 (4/23)	64.4 (4/23)	no	Naturally occurring in the environment	Fena WTP Clearwell, NRMC-1, NRMC-2, NRMC-3, NCS-3, NCS-5, NCS-6, NCS-7, NCS-A
Total Dissolved Solids (ppm)	ns	500	226 (10/21)	1632 (10/21)	yes [†]	Erosion and soil runoff	Fena WTP Clearwell, NRMC-1, NRMC-2, NRMC-3, NCS-3, NCS-5, NCS-6, NCS-7, NCS-A
Color (color units)	ns	15	0 (4/23)	>70 (4/22)	yes [†]	Organic compounds which are naturally occurring in Fena Lake and groundwater	Fena WTP Clearwell, NRMC-1, NRMC-2, NRMC-3, NCS-3, NCS-5, NCS-6, NCS-7, NCS-A
Odor	ns	3 TON See Note 3	0 (4/22) See Note 4	C1 (6/03) See Note 4	no	Organic compounds which are naturally occurring in Fena Lake and groundwater	Fena WTP Clearwell, NRMC-1, NRMC-2, NRMC-3, NCS-3, NCS-5, NCS-6, NCS-7, NCS-A
pH	n/a	6.5 to 8.5	7.22 (6/03)	8.60 (10/21)	no	Organic compounds which are naturally occurring in Fena Lake and groundwater	Fena WTP Clearwell, NRMC-1, NRMC-2, NRMC-3, NCS-3, NCS-5, NCS-6, NCS-7, NCS-A
Corrosivity	n/a	non-corrosive	0.447 (4/23)	-0.76 (6/03)	no	Organic compounds which are naturally occurring in Fena Lake and groundwater	Fena WTP Clearwell, NRMC-1, NRMC-2, NRMC-3, NCS-3, NCS-5, NCS-6, NCS-7, NCS-A
Fluoride	n/a	2	nd (6/03)	0.73 (10/21)	no	Organic compounds which are naturally occurring in Fena Lake and groundwater	Fena WTP Clearwell, NRMC-2, NRMC-3, NCS-3, NCS-5, NCS-6, NCS-7, NCS-A

*** Secondary MCL monitoring helps in determining areas in need of adjustment, additional maintenance, or rehabilitation, in order to provide a high quality water that appeals to the consumer.

† Exceedance of an aesthetic standard. No adverse health effects associated with these parameters.

Note 3: TON = Threshold Odor Number or the dilution ratio at which taste or odor is just detectable. The smallest TON that can be observed is 1.

Note 4: E1 and C1 denote the water sample has a very faint "earthy" and "chlorine" smell with a TON of 1.

IV. SUMMARY OF REQUIRED MONITORING

Compound	Monitoring Period	Date(s) Sampled	Violation	Health Effects	Remarks
Total trihalomethanes	January - March	02/18/2002	no	See Section V, "Regulated VOCs"	All required TTHM monitoring conducted .
Five Haloacetic acids (HAA5)	April - June	4/22/02 & 6/30/02	no		
	July - September	9/15/02 & 9/16/02	no		
	October-December	10/21/2002	no		
Synthetic Organic Compounds	January - March	n/s (see remarks)	no	Health effects unknown. See Section V, "Regulated SOC's"	All required SOC monitoring conducted except during the 1st quarter. Based on the 9-year monitoring plan, monitoring started on the 2nd quarter.
	April - June	4/22-23/02 & 6/03/02	no		
	July - September	7/01/02 & 9/16/02	no		
	October-December	10/15/02 & 10/21/02	no		
Radionuclides	January - March	2/18/02 &2/19/02	no	See Section V, "Radionuclides"	All required radionuclide monitoring conducted .
	April - June	4/22-23/02	no		
	July - September	7/01/02 & 9/16/02	no		
	October-December	10/07/02 & 10/21/02	no		
Volatile Organic Compounds	January - March	n/s (see remarks)	no	Health effects unknown. See Section V, "Regulated VOCs"	All required VOC monitoring conducted except during the 1st quarter. Based on the 9-year monitoring plan, monitoring started on the 2nd quarter.
	April - June	4/22-23/02	no		
	July - September	7/01/02 & 9/16/02	no		
	October-December	10/15/02 & 10/21/02	no		

V. CONTAMINANTS AND RELATED HEALTH EFFECTS

Regulated (VOCs)	
Dichloromethane	Some people who drink water containing dichloromethane in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.
Haloacetic Acid 5(HAA5)	Some people who drink water containing Haloacetic Acid in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.
TTHMs [Total trihalomethanes]	Some people who drink water containing trihalomethanes in excess of the MCL over many years could experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.
Regulated (SOCs), including Pesticides and Herbicides	
Chlordane	Some people who drink water containing chlordane in excess of the MCL over many years could experience problems with their liver or nervous system, and may have an increased risk of getting cancer.
Simazine	Some people who drink water containing Simazine in excess of the MCL over many years could experience problems with their blood.
Di(2-ethylhexyl)-phthalate	Some people who drink water containing di(2-ethylhexyl) phthalate in excess of the MCL over many years could experience problems with their liver, or experience reproductive difficulties, and may have an increased risk of getting cancer.
Regulated (IOCs)	
Barium	Some people who drink water containing barium in excess of the MCL over many years could experience an increase in blood pressure.
Chromium	Some people who use water containing chromium in excess of the MCL over many years could experience allergic dermatitis.
Fluoride	Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Children may get mottled teeth.
Total Nitrate and Nitrite	Infants below the age of six months who drink water containing nitrate and nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
Radionuclides	
Gross Alpha Activity	Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.
Gross Beta Activity	Certain minerals are radioactive and may emit a form of radiation known as photons and beta radiation. Some people who drink water containing beta and photon emitters in excess of the MCL over many years may have an increased risk of getting cancer.
Special Monitoring for Sodium	
Sodium	Remarks: See 40 CFR Part 141, Section 141.41(c).
Lead and Copper	
Copper	Copper is an essential nutrient. However, some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.
Microbiological Contaminants	
Total Coliform [TC]	Coliforms are bacteria which are naturally present in the environment and are used as an indicator that other, potentially harmful, bacteria may be present. If coliforms are found in more samples than allowed, this is a warning of potential problems.
Fecal Coliform [FC] / E. coli	Fecal coliforms and E.coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, and people with severely compromised immune systems.
Turbidity as an Indicator of Filtration Performance	
Turbidity	Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease causing organisms. These organisms include bacteria, viruses, and parasites which can cause symptoms such as nausea, cramps, diarrhea and associated headaches.